CLAIMS

What is claimed is:

1.   A method for a user equipment (UE) to transmit a data field of symbols comprising the steps of:

generating a first data field of symbols;

encoding said first data field producing a second data field having complex conjugates of the symbols of said data field;

spreading said first and second data fields, wherein said first data field is spread using a first channelization code and said second data field is spread using a second channelization code, each channelization code being uniquely associated with one of a first and second antennas; and

transmitting an RF signal including said first and second spread data fields over a first and second antenna.

2.   The method of claim 1 further comprising the step of scrambling said first and second spread data fields by a scrambling code associated with said UE.

3.   The method of claim 2 wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field.

4.   The method of claim 3, wherein the symbols of said second data field of symbols are grouped into a third and fourth sub-data field, wherein said third sub-data field is the negative complex conjugate of said second sub-data field and said fourth sub-data field is the complex conjugate of said first sub-data field.

5.   A user equipment (UE) including a transmitter for transmitting a data field of symbols, the transmitter comprising:

a first and second antenna for transmitting said data field of symbols;

an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field; and

a first and second spreading device for spreading said first and second data fields, wherein said first spreading device spreads said first data field using a first channelization code and said second spreading device spreads said second data field using a second channelization code, each channelization code being uniquely associated with one of said first and second antennas.

6.   The UE of claim 5 wherein said transmitter further comprises a first and second scrambling device for scrambling said first and second spread data fields by a single scrambling code associated with said transmitter.

7.   The UE of claim 6 wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field.

8.   The UE of claim 7, wherein the symbols of said second data field of symbols are grouped into a third and fourth sub-data field, said third sub-data field being the negative complex conjugate of said second sub-data field and said fourth sub-data field being the complex conjugate of said first sub-data field.

9.   A user equipment (UE) including a transmitter comprising a transmitter including:

a first and second means for transmitting a data field of symbols including a first data field;

a means for encoding said data field producing a second data field having complex conjugates of the symbols of said data field; and

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a first and second spreading means for spreading said first and second data fields, wherein said first spreading means spreads said first data field using a first channelization code and said second spreading means spreads said second data field using a second channelization code, each channelization code being uniquely associated with one of said first and second transmitting means.

10.   The UE of claim 9 wherein said transmitter further comprises a means for scrambling said first and second spread data fields by a scrambling code associated with said transmitting means.

11.   The UE of claim 10 wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field.

12.   The UE of claim 11, wherein the symbols of said second data field of symbols are grouped into a third and fourth sub-data field, wherein said third sub-data field is the negative complex conjugate of said second sub-data field and said fourth sub-data field is the complex conjugate of said first sub-data field.

13.   A method for a user equipment (UE) to transmit a data field of symbols including a transmitter, the method comprising the steps of:

generating a data field of symbols;

spreading said first data field using a first channelization code producing a first spread data field;

spreading said first data field using a second channelization code producing a second spread data field, each channelization code being uniquely associated with one of a first and second antennas; and

transmitting an RF signal including said first and second spread data fields over a first

and second antenna.

14.   The method of claim 13 further comprising the steps of scrambling said first and second spread data fields by a scrambling code associated with said transmitter.

15.   A user equipment (UE) including a transmitter for transmitting a data field of symbols, the transmitter comprising:

a first and second antenna for transmitting said data field of symbols; and

a first and second spreading device for spreading said data field, wherein said first spreading device spreads said data field using a first channelization code, producing a first spread data field, and said second spreading device spreads said data field using a second channelization code, producing a second spread data field, each channelization code being uniquely associated with one of said first and second antennas.

16.   The UE of claim 15 further comprising a first and second scrambling device for scrambling said first and second spread data fields by a single scrambling code associated with said transmitter.

17.   A user equipment (UE) including a transmitter comprising:

a first and second means for transmitting a data field of symbols; and

a first and second spreading means for spreading said data field, wherein said first spreading means spreads said data field using a first channelization code producing a first spread data field and said second spreading means spreads said second data field using a second channelization code producing a second spread data field, each channelization code being uniquely associated with one of said first and second transmitting means.

18.   The UE of claim 17 further comprising a means for scrambling said first and second spread data fields by a scrambling code associated with said transmitting means.